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Short communication

New distributional records for four species of Stromboidea (Mollusca: Gastropoda) from Australasia

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INTRODUCTION

Recently the second author acquired some specimens of *Mirabilistrombus listeri* (T. Gray, 1852) and *Rostellariella delicatula* (Nevill, 1881) from the Arafura Sea, between the Aru Islands and Arnhem Land coast of the Northern Territory, Australia. As this locality is a long way from the presently known distribution of these species according to the literature and therefore quite unexpected, we put these new localities on record here. Kronenberg (2002) gave only Indian Ocean localities for *Euprotomus aurora* in the original description. Since then, some more localities have come to the attention of the authors, and we take the opportunity to record those as well. This is also the case for *Dolomena hickeyi*, originally described from off Queensland and Papua New Guinea (Willan 2000), but now realised as widely distributed in the south-western Pacific.

Based on conchological characters, it has been advocated that the genus *Strombus* sensu Abbott (1960) is not monophyletic (e.g. Kronenberg and Vermeij 2002). Recently, this has been confirmed on the basis of anatomical studies (Simone 2005) and molecular evidence (Latiolais 2003). The name *Strombus* should only be employed for a clade consisting of the American Recent (Neotropical) species and their fossil ancestors, and will probably also include the West African *Strombus latus* (Kronenberg and Vermeij 2002; Latiolais 2003; Kronenberg and Lee in prep.). To overcome this non-monophyletic use of *Strombus* for all Indo-Pacific species, we use the strombid taxa employed as subgenera by Abbott (1960) as full genera, but emphasising at the same time we do not advocate the elevation of all Abbott's subgenera to generic status. For instance, some allocations by Abbott have already shown to be erroneous (Moolenbeek and Dekker 1993; Kronenberg 1998; Kronenberg and Vermeij 2002; Kronenberg and Lee in prep. and references in those papers).

ABBREVIATIONS USED

BDJI	Bunjamin Dharma, Jakarta, Indonesia
GKEN	Gijs C. Kronenberg, Eindhoven, The Netherlands
HDWN	Henk Dekker, Winkel, The Netherlands
MBWN	Matthijs A. Bouwknegt, Wageningen, The Netherlands
NTM	Museum and Art Gallery of the Northern Territory, Darwin, Australia
TBCM	Tim Blackwood, Cohasset, Minnesota, USA
VLFI	Virgilio Liverani, Faenza, Italy
WBFT	Winston Barney, Fort Worth, Texas, USA

NEW DISTRIBUTIONAL RECORDS

Family Rostellariidae Gabb, 1868

For recognition of Rostellariidae as a family, see Kronenberg and Burger (2002).

Genus *Rostellariella* Thiele, 1929

For recognition of *Rostellariella* as a genus, see Kronenberg and Burger (2002).

Rostellariella delicatula (Nevill, 1881)

(Fig. 1A, B)

Previously known distribution (taken from literature): northern part of the Indian Ocean, from Gulf of Aden to Sumatra, including Bay of Bengal (Walls 1980; Kronenberg and Berkhout 1984; DeTurck *et al.* 1999); Vietnam, off Khanh Hoa province (Thach 2005).

New distributional record. Arafura Sea, between Aru and Australia, where three specimens were trawled alive at approximately 144 m (originally indicated as 80 fathoms) in black mud by Indonesian fishermen.

Remarks. It is quite surprising to have this record of the well-known *Rostellariella delicatula* in the Arafura Sea so soon after the discovery of another species of this genus from roughly the same area (Morrison 2005). So far *R. delicatula* has not been collected together with *R. lorenzi* Morrison, 2005.

The record from Vietnam (Thach 2005) concerns one single specimen illustrated in Thach (2005: pl. 16, fig. 3), and is the first record of this species from off Vietnam. This specimen was found at a depth of 80–100 m (Thach pers. comm. to GKEN, May 2005).

As Melvill and Standen (1905) mention a mud substrate in their paper, we suspect that the habitat is the same for the Indian Ocean specimens and the Arafura Sea specimens reported herein. Melvill and Standen (1905) also report specimens from the Persian Gulf (24°49'N, 55°56'E) at a depth of 250 fathoms (approximately 450 m), but this locality appears to be erroneous because it plots out to be on the mainland of the Arabian Peninsula. Other localities given by Melvill and Standen, with depths varying from 140 to 175 fathoms (approximately 250–315 m), from the Gulf of Oman are more credible.

Family Strombidae Rafinesque, 1815

Genus *Mirabilistrombus* Kronenberg, 1998

Mirabilistrombus listeri (T. Gray, 1852)

(Fig. 1C, D)

Previously known distribution (taken from literature): Gulf of Oman; northwest Indian Ocean; Bay of Bengal (Okutani 1965; Walls 1980; Kronenberg and Berkhout 1984; DeTurck *et al.* 1999).

New distributional record. Arafura Sea, between Aru and Australia, where five dead specimens were trawled at approximately 144 m (originally indicated as 80 fathoms) by Indonesian fishermen. One specimen was still fresh with the typical colour pattern (Fig. 1C), but the pattern had faded in the other specimens, and they had a more or less uniform brown colour (Fig. 1D).

Remarks. The taxonomic placement of this species has been controversial. Abbott (1960) placed it in the subgenus *Doxander* Iredale. Iredale (1931), however, only gave a name and no description, and therefore *Doxander* Iredale, 1931 is a nomen nudum and not available (ICZN art. 13). We have found no earlier reference prior to that of Wenz (1940) wherein the name *Doxander* was made available, so the name *Doxander* should be attributed to Wenz, 1940. Okutani (1965) allocated this species to *Euprotomus* Gill, 1870, but is was re-allocated to *Doxander* by Walls (1980). Kronenberg and Berkhout (1984) followed Okutani. Based on conchological evidence, Kronenberg (1998) described *Mirabilistrombus* as a new genus to accomodate this species.

The species has been reported as living at depths of 120 m (as 67 fathoms) (Abbott 1960) and 40–80 m (Kronenberg and Berkhout 1984). The Arafura Sea record is from slightly deeper water.

Genus *Euprotomus* Gill, 1870

Euprotomus aurora Kronenberg, 2002

(Fig. 1E, F)

Previously known distribution (taken from literature): Indian Ocean localities listed by Kronenberg (2002). Additional records: Japan, Mikawa; Philippines, Bohol and Cebu; Australia, Northern Territory, Darwin (Monsecour 2004); Indonesia, Java, west coast (Dharma 2005).

New distributional records. Papua New Guinea, East Cape (10°15'S, 150°52'E), H.T. Williams, c. 1935, NTM P2357, 1 specimen; Indonesia, south of Sunda Strait, 2 specimens; Palabuhan Ratu, south-west Java, 1 specimen; Pangandaran, south-west Java, 13 specimens; east Java, 1 specimen, all coll. BDJI.

New fossil record. KENYA, locality 2a: Quarry in reef-limestone, eastern shore of Mombassa Harbour, just north east of the Swimming Club at English Point, as *Strombus auris-dianae* (sic) (Cox 1930: 137). Cox also mentioned the Pleistocene of Dar-es-Salaam (Tanzania).

Remarks. There is no doubt about the authenticity of the Papua New Guinea specimen recorded here. In NTM there is an original, hand-written statement by Mrs Thea J. Williams on 24 October 1983 to the Museum's Director donating the collection of her late husband, Rev. Henry T. Williams, to the Museum on file. Rev. Williams served as a missionary for 16 years on islands off Papua New Guinea between 1930 and 1946 (Richard C. Willan pers. comm. to GKEN May 2005).

The specimens in the BDJI collection and the specimen from Darwin (Monsecour 2004) partially fill in the gap between the Indian Ocean distribution as originally reported by Kronenberg (2002) and the Papua New Guinea specimen reported herein. The Indonesian records in the BDJI collection probably represent viable populations, given the number of specimens encountered. The Darwin (Monsecour 2004) and Papua New Guinea (herein) records are probably incidental findings however, possibly from larvae being carried in some fashion to those localities, as Willan (2005) does not mention this species from Ashmore, Cartier and Hibernia reefs (Timor Sea), nor a population near Darwin, an area often visited by R.C. Willan (pers. comm. to GKEN).

The Philippine and Japanese records by Monsecour (2004) cannot be accepted unreservedly. The Japanese record is especially questionable, as it is very far from the established distribution range. Both *Euprotomus bulla* (Röding, 1798) and *E. aurisdianae* (Linnaeus, 1758) occur in the Philippines (Springsteen and Leobrera 1986)

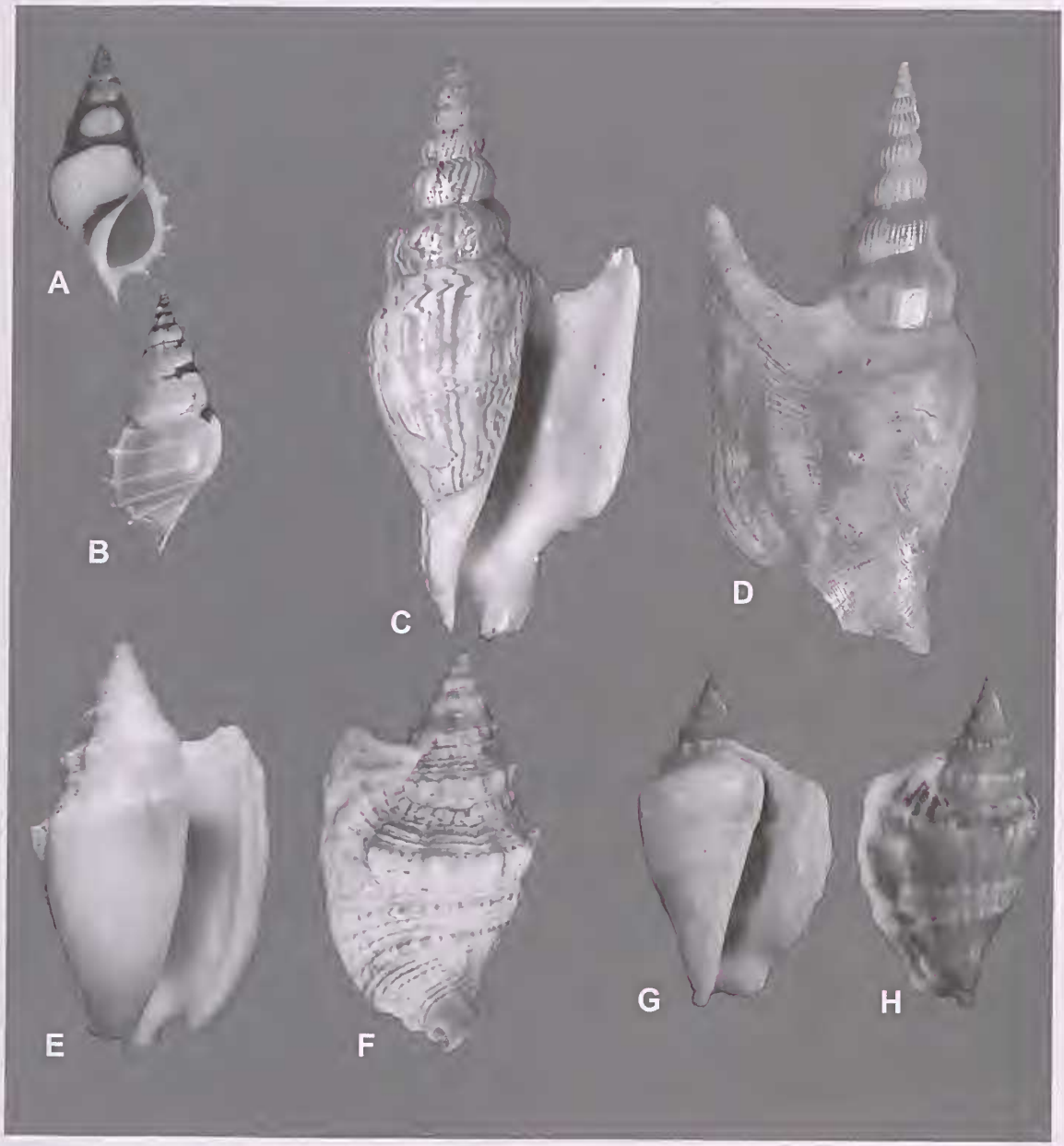

Fig. 1.A, B, *Rostellariella delicatula* (Nevill, 1881). Arafura Sea, taken at approximately 144 m by Indonesian fishermen, length 51.2 mm BDJI collection (photo Bunjamin Dharma); **C, D,** *Mirabilistrombus listeri* (T. Gray, 1852). Arafura Sea, taken at approximately 144 m by Indonesian fishermen; **C,** Length 113.8 mm, BDJI collection; **D,** length 114 mm, GKEN collection no. 6293 (photo Bunjamin Dharma); **E, F,** *Euprotomus aurora* Kronenberg, 2002. Papua New Guinea, East Cape, leg. H.T. Williams, c. 1935, length 63.5 mm NTM P2357 (photo NTM); **G, H,** *Dolomena hickeyi* (Willan, 2000). Philippines, Cebu, Punta Engaño, length 48 mm (photo Douglas Tolrud).

and southern Japan (Higo *et al.* 1999), and a mix up of samples at the hands of a shell dealers can easily happen (pers. obs. GKEN).

According to Monsecour (pers. comm. to GKEN, May 2005) the specimen he reported from Cebu, collected by Mike Filmer, is a genuine record, as Filmer only collected specimens he had found personally. More records from the Philippines however are needed to verify the existence of *E. aurora* from that area.

Nevertheless, it is remarkable that so soon after the description of this species, at first believed as being endemic to the Indian Ocean, records from the Pacific Basin are emerging, a matter that needs further investigation.

Genus *Dolomena* Wenz, 1940

As mentioned above for *Doxander*, the genus *Dolomena* has long been attributed to Iredale (Abbott 1960; Walls 1980; Kronenberg and Berkhout 1984; DeTurck *et al.* 1999; Raven 2002). As for *Doxander,* Iredale (1931) only gave a name and no description, and therefore *Dolomena* Iredale, 1931 is a nomen nudum and not available (ICZN art. 13). We have found no earlier reference prior to that of Wenz (1940), wherein the name *Dolomena* was made available. Therefore the name *Dolomena* should be attributed to Wenz (1940).

Dolomena hickeyi (Willan, 2000)

(Fig. 1G–H)

Previously known distribution (taken from literature): Papua New Guinea and eastern coast of Queensland, Australia (Willan 2000); Malaysia, Kota Kinabalu; Sabah, Malawali Island; and Brunei, Jerudong (Raven 2002); Indonesia, Karimata Strait (Dharma 2005).

New distributional records. THAILAND: Andaman Sea, Kor Bon, WBFT, 6 specimens (see below); Gulf of Thailand, Pattani, taken from fishermen's nets, September 1998, HDWN coll. no. 2011, 5 specimens; Ban Pak Nam Sakom, 60 km west of Pattani (6°57'N, 100°49'36"E); local fishery. January 2000, HDWN coll. no. 4285, 1 specimen; MALAYSIA: Johor, Sedili, ex Ng Hiong Eng, VLFI coll. no. 617-09, 1 specimen; Borneo, near wreck '*Hajicki Maru*', ex H. Morrison, VLFI coll. no. 617-07, 1 specimen. SINGAPORE: WBFT collection, 2 specimens; VIETNAM: off Nha Trang, VLFI coll. no. 617-02, 1 specimen; INDONESIA: North West Sumatra, Sibolga, 7 specimens; West Borneo, Tanjung Batu, 7 specimens; West Borneo, Pajantan Island, 1 specimen; Karimata Strait, between Kalimantan and Sumatra, 6 specimens, East Java, 4 specimens, all BDJI collection; PHILIPPINES: Mindoro, Puerto Galera area, Sabang, on sandy substrate at 19 m using scuba, 1 empty shell, M. Bouknegt, 18 December 2004; Cebu, Punta Engaño, TBCM collection; PAPUA NEW GUINEA: New Britain, Rabaul (ex Lamprell coll.), VLFI coll. no. 617-05, 2 specimens; SOLOMON ISLANDS: Guadalcanal, Honiara bay, by diver, VLFI coll. no. 617-03, 1 specimen.

Remarks. *Dolomena hickeyi* was originally described in *Labiostrombus* Oostingh, 1925 (as a subgenus of *Strombus*) by Willan (2000). We do not concur with this view, and prefer to assign this species to *Dolomena* based on shell morphology, as indicated by Abbott (1960). More research however is needed, especially regarding the assignment of several species currently assigned to *Dolomena*, see also the remarks made by Kronenberg and Vermeij (2002) on shell morphology within Strombidae.

After the publication by Raven (2002) it was predictable that more localities would become known for this species. Although a number of the samples mentioned above have minimal locality data, we are convinced that the species actually lives in, or near, the areas mentioned. However, the Kor Bon record and the Singapore record (both from WBFT collection) need confirmation (WBFT in e-mail to GKEN May 2005). The Singapore record may be referable to specimens actually collected in Karimata Strait.

The specimens from both Ban Pak Nam Sakom and Pattani were probably collected within a range of 100 km from those places, at a maximum depth of 50 m, but rather at 15–35 m (e-mail HDWN to GKEN May 2005). The Punta Engaño specimen (TBCM collection) may actually be from another Philippine locality, as shell dealers use Punta Engaño as a 'catch all' locality in the Philippines.

Bouwknegt (e-mail to GKEN May 2005) provided detailed information on the specimen he found at Sabang, Mindoro:

> "I found the shell on the evening of 18 December 2004 during a dive to the three small shipwreeks lying on a sandy bottom at 19 m depth, off the beach of Sabang. Near the largest wreck, which stands upright, there is sometimes a very weak current at the bow. This results in some shell grit being deposited and I found the shell in this grit. Although empty, without any remains of soft parts or smell, the shell is perfect, even the rim of the aperture has no scratches or dullness; this indicates, I think, that the species actually lives very near that spot (a gently sloping sandy bottom, with hardly any overgrowth). Only at 10 m there is some coverage and coral heads and only at depths below 30 m there is more coral gravel with coverings. The weak current can sometimes be detected, but appears to me as not being strong enough to make significant transport along the bottom plausible."

In the original description (Willan 2000), this species was compared with the (partly) sympatric *Dolomena pulchella* (Reeve); *D. dilatata* (Swainson); *D. minima* (Linnaeus) and the allopatric *D. columba* (Lamarck). It appears that it may also be confused with *D. dilatata* form *orosmina* (Duclos) sensu Abbott (1960) (pers. obs. authors; WBFT in e-mail). Based on Raven (2002), *Dolomena hickeyi* and *Dolomena dilatata* form *orosmina* (Duclos, 1844) sensu Abbott (1960) can be distinguished. The situation within this group of species (i.e. *Dolomena dilatata* sensu Abbott including *Dolomena hickeyi*) is not completely resolved however, and shall be discussed elsewhere (Kronenberg and Raven in prep.).

This species is probably rather common in Indonesia, as the second author has observed over a hundred specimens in a box at a shell dealer's shop in Jakarta.

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and a photograph of his specimen; Mr Winston Barney, Fort Worth, Texas, USA ; Mr Henk Dekker, Winkel, The Netherlands; Mr Tim Blaekwood, Cohasset, Minnesota, USA; and Mr Virgilio Liverani, Faenza, Italy, kindly shared the data of their specimens of *Dolomena hickeyi* with us, Mr Douglas Tolrud, Cohasset, Minnesota, USA, for photographing the specimen of *D. hickeyi* from the Tim Blackwood collection. The first author wishes to thank Dr Philippe Bouchet, Muséum Nationale d'Histoire Naturelle, Paris, France, for drawing our attention to the Iredale (1931) publication; and Ms Marianne Matthijssen, Eindhoven, The Netherlands, for her continuing support. We also thank Dr Richard Willan for kindly reading the manuscript and valuable suggestions for improvement.

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